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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,320	09/26/2003	Yohichiroh Watanabe	242938US0	5358

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EXAMINER	
DOTE, JANIS L	
ART UNIT	**PAPER NUMBER**
1756	

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/670,320	WATANABE ET AL.	
	Examiner	Art Unit	
	Janis L. Dote	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3 and 8-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 8-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/31/06;10/3/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicants' submission filed on Aug. 31, 2006, has been entered.

2. The examiner has considered the US application listed on "List of related cases" in the Information Disclosure statement filed on Oct. 31, 2006.

3. The indicated allowability of claims 1, 3, and 8-28 is withdrawn upon further review of US 2003/0138717 A1 (Yagi). Rejections based on Yagi follow.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. US 2003/0138717 A1 (Yagi) was published on Jul. 24, 2003, and has an effective filing date of Oct. 31, 2002. Both dates

are prior to the filing date of Sep. 26, 2003, of the instant application. The inventive entity of Yagi differs from that of the instant application. Thus, Yagi qualifies as prior art under 35 U.S.C. 102(a) and under 35 U.S.C. 102(e). Accordingly, Yagi qualifies also as prior art under 35 U.S.C. 103(a) and 103(c).

6. Claims 1, 3, 8-12, and 15-27 are rejected under 35 U.S.C. 103(a) as unpatentable over Yagi, as evidenced by the Polymer Technology Dictionary, page 444, and by applicants' admission at page 24, line 20, to page 25, line 12, page 26, line 20, to page 27, line 2, page 28, lines 10-18, page 31, lines 11-14, page 36, lines 8-10, and Table 1 at page 83, examples 1-6 and comparative examples 3 and 4, of the originally filed specification (applicants' admission 1).

Yagi discloses a toner comprising toner particles comprising a binder resin, carnauba wax as the releasing agent, and carbon black, and organic fine resin particles 1 adhered to the surface of the toner particles at a coverage ratio of 32%. See paragraphs 0239-0273; example 2 in paragraph 0274; and Table 1 at page 23, example 2. The binder resin comprises a modified polyester resin and an unmodified polyester resin - low molecular weight polyester 1. The toner has a number average

particle size (Dn) of 5.50 μm and a volume average particle size (Dv) of 6.07 μm, and a ratio of Dv/Dn of 1.10. The toner also has an average circularity of 0.953. See Table 1 at page 23, example 2. The average circularity, the Dv, the ratio Dv/Dn, and are within the ranges recited in instant claims 12, 17, and 18, respectively. The reference low molecular weight polyester resin has a weight average molecular weight of 6700, which is within the second resin weight average molecular weight range of 2,000 to 10,000 recited in instant claims 1, 21, 24, and 26, and an acid value of 25, which is within the acid value range recited in instant claim 9. The low molecular weight polyester resin also has a number average molecular weight of 2500, and a peak molecular weight in the range of from 1,000 to 30,000. Paragraph 0151, lines 1-2, and paragraph 0244, lines 14-15. The number average molecular weight and peak molecular weight are within the ranges of the non-modified polyester resin recited in instant claim 19. The weight ratio of the modified polyester to low polyester resin 1 is about 0.6, which is within the ratio range of 5/95 to 60/40 recited in instant claim 8. The weight ratio was determined by the information provided in example 2 of Yagi. Organic fine resin particles 1 have a Tg of 57°C, and an average particle size of 100 nm. The Tg and average particle size meet the ranges

recited in instant claim 3 and 11, respectively. The organic fine resin particle average particle size of 100 nm is 0.016 times the average particle size of the toner particles (6.07 μm = 6070 nm), which is within the range of 0.002 to 0.2 times recited in instant claims 1, 21, 24, and 26.

Yagi further discloses that the remaining ratio of organic fine resin particles 1 on the surface of the toner particles is 0.5 % by weight based on the weight of the toner particles. Table 1 at page 23, example 2. Yagi defines the remaining ratio as the ratio of the weight of the resin particles remaining on the surface of the toner particles to the weight of the toner particles. Paragraphs 0086-0088. The originally filed specification at page 36, lines 8-10 discloses that the content of 0.5 to 5.0% by weight of particulate material based on the total weight of the toner particles means "the percentage of the particulate resin remaining on the surface of the toner particles which have been subjected to a washing treatment." Thus, the Yagi remaining ratio of fine resin particles has the same definition as the content of particulate material recited in instant claims 1, 21, 24, and 26. Accordingly, the Yagi remaining ratio of 0.5 % by weight meets the content range of 0.5 to 5.0% by weight based on the weight of the toner particles recited in instant claims 1, 21, 24, and 26.

Yagi further discloses that toner particles can be mixed with an external additive to assist in improving fluidity, developing property, and charging ability of the toner particles, which meets the external additive limitation recited in instant claim 23. Paragraph 0176.

Yagi also discloses that the toner can be used in a two-component developer comprising a carrier, which is coated with a resin layer. The resin layer may comprise an acrylic resin or a silicone resin. Paragraph 0222, lines 5–8, 14-15, and 17-18. The two-component developer meets the developer limitation recited in instant claim 27. Yagi discloses a toner container shown in Fig. 2. Paragraph 0236.

The Yagi toner in example 2 is obtained by: (1) preparing a master batch comprising the carbon black and a polyester resin; (2) preparing a material solution comprising the carnauba wax and the low molecular weight polyester 1; (3) forming a pigment-wax dispersion by mixing the master batch of step (1), the material solution, and additional low molecular weight polyester; (4) mixing the pigment-wax dispersion of step (3), a modified polyester resin comprising isocyanate groups, which is capable of reacting with an active hydrogen to form the urea-modified polyester, and a ketimine compound, which has an active hydrogen, in an organic solvent; (5) dispersing the mixture of

step (4) in an aqueous medium comprising the organic fine resin particles, while reacting the ketimine compound with the modified polyester resin to form toner particles; (6) removing the organic solvent from the dispersion of step (5); (7) washing the toner particles resulting from step (6); and (8) drying the washed toner particles. Paragraphs 0252-0273. The Yagi process steps meet the process steps recited instant claims 1, 21, and 26.

Yagi does not explicitly disclose that the binder resin in example 2 has a glass transition Tg of not lower than 35°C and lower than 55°C recited in instant claims 1, 21, 24, and 26. Nor does Yagi disclose that the binder resin comprises the tetrahydrofuran (THF) insoluble components recited in instant claims 1, 21, 24, and 26, or the molecular weight distributions recited in instant claims 19 and 20. Nor does Yagi disclose that the modified polyester resin has the number average molecular weight or peak molecular weight recited in instant claim 19. Nor does Yagi disclose that the toner has a flow starting point of from 80 to 170°C recited in instant claim 16.

The originally filed specification discloses that the toner binder resin preferably has a Tg of not lower than 35°C and lower than 55°C. According to the originally filed specification, when the Tg is too high, the resultant toner has poor low temperature

fixability; and when the Tg is too low, "the resultant toner has poor preservability and thereby the blocking problem in that the toner particles adhere to each other, resulting in formation of a block of the toner tends to occur." Instant specification, page 26, line 20, to page 27, line 2, and Table 1 at page 83, examples 1-6 and comparative example 3. The specification discloses that the binder resin comprises THF-insoluble components in an amount of 2 to 30 wt% based on the total weight of the binder resin. According to the originally filed specification, when the amount of THF-insolubles is too low, the resultant toner has poor hot offset resistance; and when the amount is too high, the toner has poor low temperature fixability. Instant specification, page 28, lines 10-18, and Table 1, examples 1-6 and comparative example 4. The originally filed specification discloses at page 24, line 20, to page 25, line 12, that the THF components of the modified polyester resin and the unmodified polyester resin have a peak molecular weight and the molecular weight distributions recited in instant claims 19 and 20 "in view of a low temperature fixability and offset resistance." The specification at page 31, lines 11-14, discloses that the toner also has a flow starting temperature as recited in instant claim 16 "in view of low temperature fixability and offset resistance."

As discussed above, the toner binder resin in the Yagi toner particles and the Yagi toner particles meet the compositional limitations recited in instant claims 1, 16, 19-21, 24, and 26; but the properties discussed supra that are not disclosed expressly. As discussed supra, the Yagi toner in example 2 is obtained by a process that meets the steps recited in instant claims 1, 21, and 26. Yagi teaches that its binder resin preferably has a Tg of from 50 to 70°C. According to Yagi, when the Tg is too low, the high temperature preservability of the toner deteriorates. Paragraph 0154. Yagi discloses that the toner in example 2 has low temperature fixability and offset resistance, and does not contaminate the image forming members used, such as the fixing device and image bearing member. Paragraph 0032; and Table 3 at page 23, example 2, which reports that the toner in example 2 has a "lower fixing temperature" of 140°C and exhibits no occurrence of offset for temperatures below 220°C. Table 3 also reports that no toner filming was observed. These are the properties sought by applicants. Accordingly, because the Yagi binder resin and toner particles meet the compositional limitations recited in the instant claims and the Yagi toner appears to have the toner properties sought by applicants, it is reasonable to presume that the binder resin in the Yagi toner in example 2 has the Tg recited in instant

claims 1, 21, 24, and 26, and comprises the THF insoluble components and has THF soluble component molecular weight properties recited in instant claims 1, 19-21, 24, and 26, and that the Yagi toner in example 2 has the flow starting point recited in instant claim 16. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Yagi also does not explicitly disclose that the organic fine resin particles are embedded in the surface of the toner particles as recited in instant claims 1, 21, 24, and 26. However, as discussed above, organic fine resin particles 1 in example 2 of Yagi are present on the surface of the toner particles in a coverage ratio of 32%. The Yagi toner in example 2 is obtained by a process that meets the steps recited in instant claims 1, 21, and 26. Therefore, it is reasonable to presume that the Yagi organic fine resin particles are embedded in the surface of the toner particles as recited in instant claims 1, 21, 24, and 26. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Yagi does not appear to exemplify organic fine resin particles comprising a crosslinked resin having the weight average molecular weight recited in instant claims 1, 21, 24, and 26. However, Yagi teaches that the organic fine resin particles can equally comprise a thermoplastic resin or a

thermosetting resin. Paragraph 0078, lines 3-4. A thermosetting polymer is usually defined as "a low molecular weight polymer which may be cured, or cross-linked so as to yield a cross-linked plastics material or a vulcanized rubber." See the Polymer Technology Dictionary, page 444. Thus, Yagi teaches cross-linked organic fine particles that meet the cross-linked particulate resin recited in instant claims 1, 21, 24, and 26. Yagi further teaches that the thermoplastic resins and thermosetting resins include vinyl resins, polyurethane resins, epoxy resins, or polyester resins. Paragraph 0078-0079. The fine resin particles in example 2 of Yagi comprise a resin comprising styrene and methacrylic acid, where both monomers are present in weight ratios of 0.29 (29%) based on the total monomers constituting the resin particles. The weight ratios of 0.29 were determined from the information provided in paragraph 0239 of Yagi. The weight ratios of styrene and methacrylic acid satisfy the inequalities recited in instant claim 15. Yagi further teaches at paragraph 0077 that the resin particles preferably have a Mw not greater than 100,000, and more preferably from 4,000 to 50,000. The upper limits, 100,000 and 50,000, of the MW ranges are within the Mw range of 9,000 to 200,000 recited in instant claim 7. The ranges "not greater than 100,000" and "from 4,000 to 50,000" overlap the range of

9,000 to 200,000 recited in instant claims 1, 21, 24, and 26. According to Yagi, "[w]hen the weight average molecular weight is too high, the resin particles prevent the toner from adhering to a receiving medium, and thereby causing a problem in that the fixing temperature has to be increased." Thus, the prior art appears to recognize that the Mw of the fine resin particles is a result-effective variable. The variation of a result-effective variable is presumably within the skill of the ordinary person in the art.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Yagi, to use a thermosetting resin as the resin in the organic fine resin particles and to adjust, through routine expectation, the Mw of the organic fine resin particles, such that the resultant fine resin particles are cross-linked and have a Mw that is within the range recited in the instant claims, such as 100,000 or 50,000. It would have also been obvious for that person to use the resultant the resultant organic fine resin particles as the organic fine resin particles in the toner in example 2 of Yagi. That person would have had a reasonable expectation of successfully obtaining a toner that does not prevent the toner from adhering to a receiving member and has the properties as discussed by Yagi.

7. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yagi, as evidenced by the Polymer Technology Dictionary, page 444, and applicants' admission I, as applied to claim 1 above, combined with US 2002/0037467 A1 (Watanabe).

Yagi, as evidenced by the Polymer Technology Dictionary, page 444, and applicants' admission I, renders obvious a toner as described in paragraph 6 above, which is incorporated herein by reference.

Yagi discloses forming a toner image on a receiving member and fixing the toner image to the receiving member with a fixing belt. Paragraphs 0385-0386. However, Yagi does not disclose the use of fixing belt device as recited in instant claim 27.

Watanabe teaches a fixing device comprising a fixing belt **B** and a pressure roller **R2** to be used in fixing a toner image to a receiving member. See Fig. 1 and paragraphs 0131-0132. The fixing belt **B** is supported by the heat roller **R3** and the fixing roller **R1**. Watanabe teaches that at the nip section between the fixing belt **B** and the pressure roller **R2**, the fixing belt **B** is "caved in to prevent the offset problem and a problem in which the receiving paper is caught by the fixing belt **B**." According to Watanabe, when the fixing belt **B** or both the fixing belt **B** and the fixing roller **R1** deform like a shape of U at the nip

section, "the releasability of the toner image from . . . the fixing belt **B** is increased; and the receiving paper **Pa** is discharged at a relatively large peeling angle from . . . the fixing belt **B**." Paragraph 0135.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings in Watanabe, to use the fixing device comprising a fixing belt and a pressure roller as taught by Watanabe as the fixing belt device in the image forming method taught by Yagi using the toner rendered obvious over the teachings of Yagi. That person would have had a reasonable expectation of successfully obtaining an image forming method that provides a fixed toner image on a receiving member having the benefits disclosed by Yagi and that prevents toner offset and paper jam at the fixing nip as taught by Watanabe.

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re*

Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. The following rejection is provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10. Claims 1, 3, 8-24, 26, and 28 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 26 and 28-50 of copending Application No. 11/475,165 (Application'165).

Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in Application'165 renders obvious the subject matter recited in the instant claims.

Reference claim 28 of Application'165 recites an image forming method comprising the step of fixing a toner image on an image bearing material by passing the image bearing material

through a nip between a fixing belt and a pressure member as recited instant claim 28, wherein the toner used to form the toner image is that according to reference claim 1. The reference toner is obtained by process steps that meet the process steps recited in instant independent claims 1, 21, and 26. The toner comprises toner particles comprising a binder resin, a colorant, and a release agent and a particular material embedded on the surface of the toner particles. The binder resin comprises a modified polyester resin and a second resin having a weight average molecular weight of 2,000 to 10,000 as recited in instant independent claims 1, 21, 24, and 26. The binder resin has a glass transition (Tg) temperature that meets the Tg range recited in instant independent claims 1, 21, 24, and 26. The particulate material has an average particle diameter that meets the particle size limitation recited in instant claims 1, 21, 24, and 26.

Reference claim 28 does not recite that the particulate material comprises the particular resin recited in instant claims 1, 21, 24, and 26, or the amount of particulate material present recited in instant claims 1, 21, 24, and 26. Nor does reference claim 26 recite that the toner binder resin comprises a tetrahydrofuran (THF)-insoluble component as recited in instant claims 1, 21, 24, and 26.

Reference claim 26 recites a method of making a toner that comprises the steps recited in instant claims 1, 21, and 26. Reference claim 29, which depends on reference claim 26, requires that the particulate material have a Tg of 55 to 100°C that meets the Tg limitation as recited in instant claims 1, 21, 24, and 26. Reference claim 31, which depends on reference claim 29, requires that the particulate material be crosslinked as recited in instant claims 1, 21, 24, and 26. Reference claim 34, which depends on reference claim 29, requires that the particulate material have a weight average molecular weight and be present in an amount that meets both the molecular weight and amount limitations recited in instant claims 1, 21, 24, and 26. Reference claims 33 and 48, which depend from reference claim 26, require that the toner binder resin comprise THF insolubles that meet the THF-insoluble limitations recited instant claims 1 and 26 and instant claim 21, respectively. Reference claim 30 and reference claims 35-47, 49, and 50, which depend from reference claims 29 and 26, respectively, recite the binder resin limitations, the particulate material limitations, and the toner particle size and shape limitations recited in instant dependent claims 3, 8-20, 22, and 23, which depend from instant claim 1.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Application'165, to make and use a toner as recited in the instant claims. That person would have had a reasonable expectation of successfully obtaining a toner, a method of making said toner, and a method of fixing a toner image using said toner that meet the limitations recited in the instant claims.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JANIS L. DOTE
PRIMARY EXAMINER
GROUP ~~1500~~ 1700

JLD
Oct. 16, 2006